

JFW Receipt

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

|             |                                 |           |
|-------------|---------------------------------|-----------|
| Applicant:  | Ralph Nonninger                 | )Examiner |
| Serial No.: | 10/525,700                      | )Unknown  |
| Filed:      | 08/25/2005                      | )Art Unit |
| For:        | CERAMIC HOLLOW FIBERS MADE FROM | )1775     |
|             | NANOSCALE POWDER PARTICLES      | )         |



June 2007

TRANSMITTAL LETTER TO CORRECT FILING RECEIPT

Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

Please correct the filing receipt for the hereinabove referenced U.S. Patent Application under the "Title" category. The filing receipt shows the title as "Ceramic Hollow Fibers Made From **Nanomscale** Powder Particles" should be "Ceramic Hollow Fibers Made From Nanoscale Powder Particles". A copy of the filing receipt, title page of Form PTO-1390, and first page of specification are attached herewith for your reference.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Walter A. Hackler".

Walter A. Hackler, Reg. No. 27,792  
Attorney of Record  
2372 S.E. Bristol, Suite B  
Newport Beach, California 92660  
Tel: (949) 851-5010  
Fax: (949) 752-1925



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
 United States Patent and Trademark Office  
 Address: COMMISSIONER FOR PATENTS  
 P.O. Box 1450  
 Alexandria, Virginia 22313-1450  
 www.uspto.gov

| APPL NO.   | FILING OR 371<br>(c) DATE | ART UNIT | FIL FEE REC'D | ATTY. DOCKET NO | DRAWINGS | TOT CLMS | IND CLMS |
|------------|---------------------------|----------|---------------|-----------------|----------|----------|----------|
| 10/525,700 | 08/25/2005                | 1775     | 515           | 3312            |          | 18       | 2        |

CONFIRMATION NO. 7653

Walter A Hackler  
 Patent Law Office  
 2372 S E Bristol Street  
 Suite B  
 Newport Beach, CA 92660-0755

## FILING RECEIPT



\*OC000000017987710\*

Date Mailed: 02/06/2006

Receipt is acknowledged of this regular Patent Application. It will be considered in its order and you will be notified as to the results of the examination. Be sure to provide the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION when inquiring about this application. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please mail to the Commissioner for Patents P.O. Box 1450 Alexandria Va 22313-1450. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections (if appropriate).

## Applicant(s)

Ralph Nonninger, Saarbrucken, GERMANY;

## Power of Attorney:

Walter Hackler--27792

## Domestic Priority data as claimed by applicant

This application is a 371 of PCT/EP02/09698 08/30/2002

## Foreign Applications

Projected Publication Date: 05/18/2006

Non-Publication Request: No

Early Publication Request: No

\*\* SMALL ENTITY \*\*

## Title

Ceramic hollow fibers made from nanomscale powder particles

**Preliminary Class**

428

**PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES**

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at <http://www.uspto.gov/web/offices/pac/doc/general/index.html>.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, <http://www.stopfakes.gov>. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4158).

---

**LICENSE FOR FOREIGN FILING UNDER  
Title 35, United States Code, Section 184  
Title 37, Code of Federal Regulations, 5.11 & 5.15**

**GRANTED**

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign Assets Control, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

#### **NOT GRANTED**

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

TRANSMITTAL LETTER TO THE UNITED STATES  
DESIGNATED/ELECTED OFFICE (DO/EO/US)  
CONCERNING A SUBMISSION UNDER 35 U.S.C. 371

3312

U.S. APPLICATION NO. (If known, see 37 CFR 1.5)

UNKNOWN

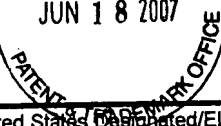
INTERNATIONAL APPLICATION NO.  
PCT/EP2002/009698INTERNATIONAL FILING DATE  
AUGUST 30, 2002PRIORITY DATE CLAIMED  
NONE

## TITLE OF INVENTION

CERAMIC HOLLOW FIBERS MADE FROM NANOSCALE POWDER PARTICLES

APPLICANT(S) FOR DO/EO/US  
RALPH NONNINGER

JUN 18 2007



Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a **FIRST** submission of items concerning a submission under 35 U.S.C. 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a submission under 35 U.S.C. 371.
3. ☐ This is an express request to begin national examination procedures (35 U.S.C. 371(f)). The submission must include items (5), (6), (9) and (24) indicated below.
4. ☐ The US has been elected (Article 31).
5. ☒ A copy of the International Application as filed (35 U.S.C. 371 (c)(2))
  - a. ☒ is attached hereto (required only if not communicated by the International Bureau).
  - b. ☐ has been communicated by the International Bureau.
  - c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☒ An English language translation of the International Application as filed (35 U.S.C. 371(c)(2)).
  - a. ☒ is attached hereto.
  - b. ☐ has been previously submitted under 35 U.S.C. 154(d)(4).
7. ☐ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371 (c)(3))
  - a. ☐ are attached hereto (required only if not communicated by the International Bureau).
  - b. ☐ have been communicated by the International Bureau.
  - c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
  - d. ☒ have not been made and will not be made.
8. ☐ An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. ☒ An oath or declaration of the inventor(s) (35 U.S.C. 371 (c)(4)).
10. ☐ An English language translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371 (c)(5)).
11. ☒ A copy of the International Preliminary Examination Report (PCT/IPEA/409).
12. ☒ A copy of the International Search Report (PCT/ISA/210).

## Items 13 to 23 below concern document(s) or information included:

13. ☒ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
14. ☐ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
15. ☒ A **FIRST** preliminary amendment.
16. ☐ A **SECOND** or **SUBSEQUENT** preliminary amendment.
17. ☐ A substitute specification.
18. ☐ A power of attorney and/or change of address letter.
19. ☐ A computer-readable form of the sequence listing in accordance with PCT Rule 13ter.2 and 37 CFR 1.821 - 1.825.
20. ☐ A second copy of the published International Application under 35 U.S.C. 154(d)(4).
21. ☐ A second copy of the English language translation of the International Application under 35 U.S.C. 154(d)(4).
22. ☒ Express Mail Label No. EV 108193208 US
23. ☒ Other items or information:

RETURN RECEIPT POSTCARD  
TRANSLATION OF ~~NON~~ ENGLISH PRIOR ART  
TITLE PAGE OF PUBLISHED PCT APPLICATION

CERAMIC HOLLOW FIBERS MADE FROM NANOSCALE POWDER PARTICLES

Description

The invention relates to a method for the manufacture of a ceramic hollow fiber based on nanoscale oxide particles, preferably yttrium stabilized zirconium oxide, zirconium oxide, titanium dioxide, silica and alumina as well as ceramic hollow fibers manufactured according to this method.

Ceramic fibers are achieving more and more industrial significance wherein especially whole ceramic fibers of alumina are already available in the marketplace. Thus, the firms 3M, Mitsui, Sumitomo and Toyoba already offer continuous aluminum oxide ceramics in price ranges between 400 and 1800 US\$/kg. Short ceramic fibers with lengths in the range from 1  $\mu\text{m}$  are of lesser industrial significance due to the fact that these fibers may no longer be processed in Germany for example, based on their lung respirability. New development trends are coming to the fore in the area of the ceramic hollow fibers which are establishing the ceramic hollow fiber principle in all areas in which whole fibers are already established and additionally developing other market segments.

Ceramic hollow fibers, although not yet commercially available, however are the subject of actual developments in many research establishments. In comparison to whole fibers, hollow fibers possess greater bending strength and a higher insulation factor which together with lower material usages, from about 40 to 60 wt%, is accompanied by savings in weight for equal volumes. Added to that is the fact that hollow bodies can be cooled from the inside, and

